CLAIMS

[1] A p-type semiconductor material expressed in a composition formula of $Zn_{(1-\alpha-\beta-\gamma)}Cu_{\alpha}A_{\beta}B_{\gamma}S_{(1-x-y)}Se_{x}Te_{y}$ ($0.004 \leqq \alpha \leqq 0.4$, $\beta \leqq 0.2$, $\gamma \leqq 0.2$, $0 \leqq x \leqq 1$, $0 \leqq y \leqq 0.2$, and $x + y \leqq 1$, A and B are elements selected from Cd, Hg and alkaline earth metals).

[2] The p-type semiconductor material according to claim 1, wherein the A is Mg.

[3] The p-type semiconductor material according to claim 1, wherein the B is Cd.

[4] The p-type semiconductor material according to claim 2, wherein the B is Cd.

[5] The p-type semiconductor material according to any of claims 1 to 4, wherein the semiconductor material contains at least one dopant selected from Cl, Br, I, Al, Ga and In as a compensation dopant and a concentration of the compensation dopant is 10^{17} to 10^{20} cm^{-3}.

[6] The p-type semiconductor material according to any of claims 1 to 4, wherein the semiconductor material has a light absorption coefficient of 5×10^{5} cm^{-1} or less at 470 nm to 750 nm.

[7] The p-type semiconductor material according to any of claims 1 to 4, wherein a volume resistivity of the semiconductor material is equal to or higher than $10^{-4}\Omega cm$ and is lower than $10^{-3}\Omega cm$.

[8] The p-type semiconductor material according to any of claims 1 to 4, wherein a carrier concentration of the semiconductor material is equal to or higher than 10^{16} cm^{-3} and is lower than 10^{22} cm^{-3}.

[9] A semiconductor device in which the p-type semiconductor material according to any of claims 1 to 4 constitutes a hole injecting electrode layer in an amorphous phase or a polycrystalline phase.

[10] The semiconductor device according to claim 9, wherein the semiconductor device is a light emitting device.